

Bowen Coarse Thread Safety Joints

Instruction Manual



NATIONAL OILWELL

Downhole Tools

INSTRUCTION MANUAL

BOWEN COARSE THREAD SAFETY JOINTS

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The designs and specifications for the tools described in this Instruction Manual were in effect at the time this manual was approved for printing. Bowen Tools, Inc., whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change designs and specifications, without notice or without incurring obligation.

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INSTRUCTION MANUAL

BOWEN COARSE THREAD SAFETY JOINTS

GENERAL DESCRIPTION

The Bowen Coarse Thread Safety Joint allows quick release from drilling, fishing, testing washover or tubing strings should they become stuck, leaving a minimum of pipe in the hole, thereby reducing the problems of fishing or sidetracking. The new design is simple, eliminating the need of a release ring mechanism and lengthy disengagement procedures.

The Bowen Coarse Thread Safety Joint has a rugged coarse thread design which will not loosen or wedge during operation. Once in the string the Safety Joint is resistant to vibration, heavy loads and left or right hand torque. The tool will disengage by simple left hand rotation at approximately 40% of the tool's right hand make-up torque.

O-ring seals above and below threads seal against internal and external fluid pressures. Both packers are rated for all normal pump pressures in continuous service.

The tool has a simple, two-piece, two-seal design which allows operators easy disassembly during cleaning and lubrication.

The new Safety Joint is available in a full range of sizes, types, lengths, etc. Bowen will manufacture the tool to fit customer's exact requirements.

USE

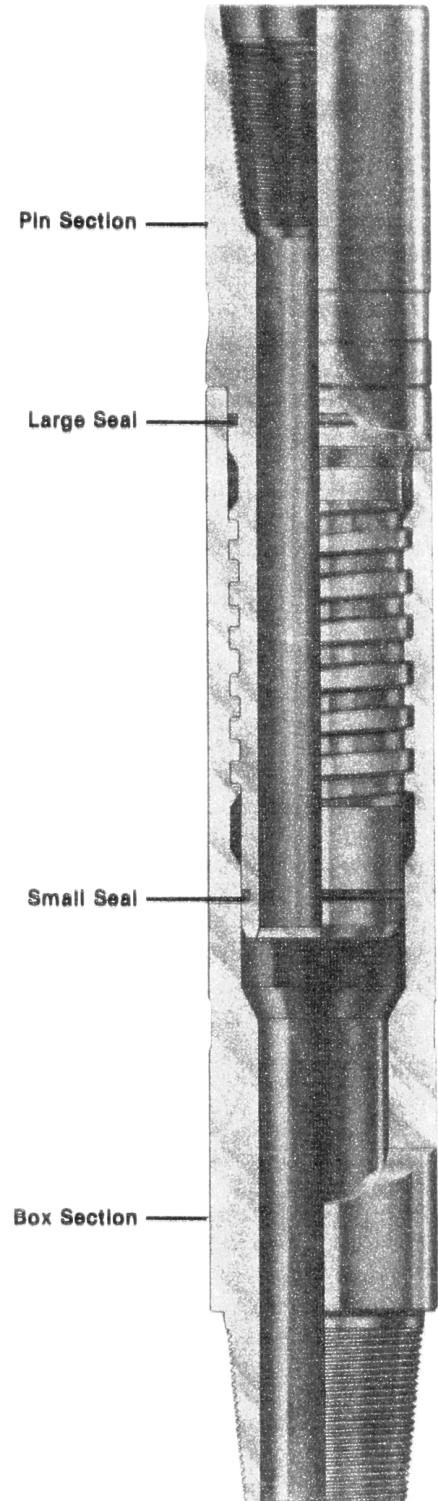
The BOWEN COARSE THREAD SAFETY JOINT is used in a drilling, fishing, testing, washover or tubing string whenever and wherever a releasing safety connection is needed.

In Drilling Strings — The Safety Joint is usually located far enough above the drill collars to prevent compression loading and to avoid sticky or heaving formations. Drill pipe Safety Joints have drill pipe box and pin connections with the O.D. and I.D. corresponding to the drill pipe tool joints.

In Fishing Strings — The Safety Joint is usually located immediately above the grappling or fishing tool and below any accessory tool such as jars or bumper subs.

In Drill Stem Testing Strings — The Safety Joint is usually located above the packer and test tool but below any accessory tool such as a jar or bumper sub.

In Washover Strings — The Safety Joint is located between the drill pipe and the washover string. Washover Safety Joints are provided with a drill pipe box connection and a washover pin connection. Diameters conform to washover pipe.



DRILL PIPE SAFETY JOINT

In Tubing Strings — The Safety Joint is usually located immediately above the tubing catcher or production packer. Tubing Safety Joints have tubing box and pin connections with O.D.'s corresponding to tubing couplings and I.D.'s corresponding to the tubing.

CONSTRUCTION

The BOWEN COARSE THREAD SAFETY JOINT consists of an upper Pin Section, a lower Box Section and two seals. The upper Pin Section has a box connection up for connecting to the tool joint and a male coarse thread down for connection to the Box Section. The Box Section has a female coarse thread matching the male thread of the Pin Section and has a tool joint pin connection down for connecting to the pipe.

The coarse thread design of the Pin and Box Sections allows speed and ease of engagement. When the Safety Joint is made up tightly, the joining coarse threads grip each other securely, pulling the surfaces into complete contact and therefore, form the Safety Joint into a rigid unit.

The Pin Section is grooved at the top and bottom to accommodate the "O" ring type seals which seal the Safety Joint from both internal and external fluid pressures. Both seals are rated for high pressure operation, capable of withstanding up to 10,000 P.S.I. in continuous service.

OPERATION

1. First, examine the Pin Section to ascertain that the Top and Bottom seals are in good condition and are properly installed in the grooves.
2. Thoroughly lubricate the coarse thread surfaces of the Pin Section and the Box Section. Make up the Pin and Box Sections by hand.
3. Position the Safety Joint at the desired point in the string.
 - (a) Drilling String — Position the Safety Joint far enough above the Drill Collars to avoid compression loading and to avoid sticky or heaving formations.
 - (b) Fishing String — Position the Safety Joint immediately above the grappling or fishing tool.
 - (c) Drill Stem Test — Position the Safety Joint above the packer and testing tool.

- (d) Washover String — Position the Safety Joint between the washover string and the drill pipe.
- (e) Tubing String — Position the Safety Joint above the tubing catcher or the production packer.

4. Screw the tool joint pin of the Safety Joint into the joint box of the pipe and make it up as an ordinary tool joint.
5. With one tong on the Box Section and one tong on the Pin Section, make up the Safety Joint to the same degree of tightness as the tool joints in the string.
6. Screw the pin end of the next stand of pipe into the box of the Safety Joint and make it up similarly to an ordinary tool joint connection and run the pipe into the well.

TO DISENGAGE THE SAFETY JOINT IN THE HOLE

1. To break the connection, rotate the string *to the left* at 40 percent of the tools right hand make-up torque — one turn in straight or shallow holes, two or three turns in deep or crooked holes.
2. Now, pick up the string until at least 1000 lbs. of weight but not more than 2000 lbs. remains on the Safety Joint. If more than 2000 lbs. is applied, the Safety Joint will release but the possibility of damage to the shoulder at the point of disengagement exists.
3. Pick the string up slowly while rotating *to the left* to unscrew the Safety Joint. As the coarse threads unscrew, they will lift the pipe approximately 1/2 inch per revolution.
4. During the releasing of the Safety Joint, the pipe weight will decrease. The operator should be careful to maintain the pipe weight at 1000 lbs. but not more than 2000 lbs. as noted in Step 2 above.

TO REENGAGE THE SAFETY JOINT IN THE HOLE

1. Lower the string into the hole until the Pin Section contacts the Box Section.
2. Carefully apply one point of weight and rotate slowly *to the right*. An increase in torque will indicate that the Safety Joint has reengaged.

PRECAUTIONS

Use lubricating oil or a similar lubricant to lubricate the coarse threads of the Pin Section and Box Section of the Safety Joint.

Whenever the Safety Joint is used in continuous operation such as a drilling string, it is recommended that it be dismantled periodically (at least once a week). The seals should be replaced and the two sections be thoroughly greased.

MAINTENANCE

To guard against misruns and to prolong the life of the tool, the BOWEN COARSE THREAD SAFETY JOINT should be dismantled after use, thoroughly cleaned, lubricated and serviced before storing.

1. Dismantle the Safety Joint. If the two sections are not in tight engagement, they may be unscrewed by hand. If, on the other hand, the two sections are in tight engagement, place a tong wrench on each section and unscrew the Pin Section from the Box Section.

NOTE: *Be sure to protect the tool joint pin connection before dismantling.*

2. Thoroughly clean each section.
3. Replace the large seal (top) and the small seal (bottom).
4. Thoroughly lubricate the coarse thread surfaces of the Pin Section and Box Section. Make up the Pin and Box Sections by hand.
5. Reassemble the Safety Joint. Paint or lubricate all exterior surfaces to prevent rust or deterioration.

SPECIFICATIONS

BOWEN COARSE THREAD SAFETY JOINT

SPECIFICATIONS — BOWEN DRILL PIPE SAFETY JOINTS

SIZE		2-3/8	2-3/8	2-7/8	2-7/8	2-7/8	3-1/2	3-1/2	3-1.2	3-1/2	3-1/2	4	4
TYPE		API Reg. Acme Reg.	API I.F. Hyd. I.F.	API Reg. Acme Reg.	Hyd. I.F.	API I.F.	API Reg.	Hyd. I.F.	API F.H.	API REG.	API I.F.	API F.H.	API I.F.
O.D. OF JOINT		3-1/8	3-3/8	3-3/4	3-7/8	4-1/8	4-1/4	4-1/2	4-5/8	4-3/4	4-3/4	5-1/4	5-3/4
BORE OF JOINT		1	1-3/4	1-1/4	2-1/8	2-1/8	1-1/2	2-9/16	2-7/16	1-1/2	2-11/16	2-13/16	3-1/4
COMPLETE ASSEMBLY	Part No. Weight	149342 40	149346 40	149350 60	149354 48	149358 58	149362 70	149366 63	149378 72	149374 69	149378 68	149382 105	149386 120
PIN SECTION		149343	149347	149351	149355	149359	149363	149367	149379	149375	149379	149383	149387
BOX SECTION		149344	149348	149352	149356	149360	149364	149368	149380	149376	149380	149384	149388
O-RING - SMALL		568325	568226	568329		568333	568333		568337		568337		
O-RING - LARGE		568329	568332	568333		568337	568337		568341		568341		

SPECIFICATIONS — BOWEN DRILL PIPE SAFETY JOINTS, Cont'd

SIZE		4-1/2	4-1/2	4-1/2	4-1/2	5-1/2	5-1/2	5-1/2	6-5/8	6-5/8	6-5/8	7-5/8	8-5/8
TYPE		API Reg.	API F.H.	X-Hole	API I.F. Hyd. I.F.	API Reg.	API F.H.	API I.F.	API Reg.	API F.H.	API I.F.	API Reg.	API Reg.
O.D. OF JOINT		5-1/2	5-3/4	6	6-1/8	6-3/4	7	7-3/8	7-3/4	8	8-1/2	9	10
BORE OF JOINT		2-1/4	3	3-1/4	3-3/4	2-3/4	4	4-13/16	3-1/2	5	5-29/32	4	4-3/4
COMPLETE ASSEMBLY	Part No.	149394	149398	149402	149406	149410	149414	149418	149422	149426	149430	149434	149438
	Weight	130	120	135	115	225	205	195	315	270	260	440	520
PIN SECTION		149395	149399	149403	149407	149411	149415	149419	149423	149427	149431	149435	149439
BOX SECTION		149396	149400	149404	149408	149412	149416	149420	149424	149428	149432	149436	149440
O-RING - SMALL			568344		568347				568355	568435		568361	
O-RING - LARGE			568349		568429				568359	568438		568363	

SPECIFICATIONS — BOWEN TUBING SAFETY JOINTS

SIZE	3/4	1	1	1-1/2	2	2-1/2	2-7/8	3	3
TYPE	EUE	D.S.S. Hardy Griffin	EUE	C.S. Hydril	EUE	EUE	Hydril C-100	EUE	EUE
O.D. OF JOINT	1.660	1.590	1-29/32	2-1/2	3-1/16	3-21/32	3-1/2	4-1/2	5
BORE OF JOINT	.812	.812	1	1-1/2	1-59/64	2-7/16	2-3/8	3	3
COMPLETE ASSEMBLY	Part No.	149442	149450	149454	149458	149462	149466	149470	149474
	Weight	3-2/4	4	6-1/4	3-7/8	18	28	47	50
PIN SECTION	149443	149447	149451	149455	149459	149463	149467	149471	149475
BOX SECTION	149444	149448	149452	149456	149460	149464	149468	149472	149476
O-RING - SMALL			568025	568131	568138	568146		568152	
O-RING - LARGE			568128	568225	568230	568233		568241	

SPECIFICATIONS — BOWENWASHOVER PIPE SAFETY JOINTS

SIZE	4	4-1/2	5	5-1/2	5-3/4	7	7-3/8	7-5/8	8-1/8	9	9-5/8	10-3/4	11-3/4	
TYPE	F.J.	F.J.	F.J.	F.J.	F.J.	F.J.	Hydril F.J.	F.J.	F.J.	F.J.	F.J.	F.J.	F.J.	
O.D. OF JOINT	4	4-1/2	5-3/8	5-1/2	5-3/4	7-5/16	7-3/8	8	8-5/32	9-3/8	10-1/8	11-1/16	11-3/4	
BORE OF JOINT	1-1/4	1-1/4	2-1/8	2-9/16	2-7/16	3-3/4	3	3-3/4	3-5/32	4		4	3-5/8	
COMPLETE ASSEMBLY	Part No. Weight	149478 42	149482 50	149486 54	149490 58	149494 141	149498 103	149502 339	149506 135	149510 439	149514 210	149518 240	150047 791	151992
PIN SECTION	149479	149483	149487	149491	149495	149499	149513	149507	149511	149515	149519	150048	151993	
BOX SECTION	149480	149484	149488	149492	149496	149500	149504	149508	149512	149516	149520	150049	151994	
O-RING - SMALL		568340		568244	568350			568438	568364			568274	568275	
O-RING - LARGE		568241		568248	568251			563440	568263			568375	568276	

HOW TO ORDER:

- Specify: (1) Name and Number of Assembly or Part.
 (2) Size and Type of Connections.
 (3) Any Spares Desired, by Name and Number.

*NOTE: Left hand connections available upon request.



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